Case Details

A large river system had an outbreak of algal blooms. Algal blooms form as a rapid temporary increase in the population of aquatic photosynthetic microorganisms (eg, phytoplankton or cyanobacteria) to the extent that the water becomes discoloured and, if the microorganisms are toxin-producers, unfit for drinking. To mitigate the risk of this reoccurring, it was necessary to ascertain which factors that contributed to the outbreak. The client required detailed knowledge of the weather conditions at the surface of the water and a picture of temperature stratification within the river itself.

Key Requirements

Self-powered solution
Capacity for large number of sensors
Remote access via the GSM network.

dataTaker Data Logging Products

1 Cost effective data logging solutions

2 Capable of measuring and logging DC voltage, current and resistance sources in addition to digital signals

3 Suitable for small to large scale applications

4 Rugged design and construction provides reliable operation under extreme conditions

5 Designed and manufactured in Australia to the highest quality standards

Algal bloom: These algal blooms pose a risk to anyone who drinks from a connected water source.

dataTaker Solution

Equipment

dataTaker DT505 data logger
15 Watt Solar Panel
GSM Modem

Sensors

Temperature
Relative Humidity
Solar Radiation
Wind Speed and Direction
Vertical column of 20 Thermistors

Implementation Notes

The *dataTaker* DT505 data logger, sensors, modem and solar panel were mounted to a floating pontoon on the river. The solar panel supplied power to run the logger, modem, weather sensors and a vertical column of twenty thermistors, which measured water temperature at various depths.

The data logger is programmed to acquire measurements from the sensors at predetermined intervals and store these to memory. The researchers visited the station on a weekly basis to retrieve the raw data, however the DT505 was capable of storing amounts of data for significantly longer periods.

A GSM modem was also attached to the DT505's communications port which enabled the logger to be accessed remotely by scientists and provided the ability to monitor the sensors in real-time.

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